

NCDOT Rail Division

# The Rail Report



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Photo: Adam Schultz

Double-stack intermodal train operating near Charlotte

## N.C. Rail Transportation in 2020

While 2020 presented many unique challenges, the N.C. Department of Transportation's Rail Division continued to provide critical services and improved North Carolina's rail infrastructure.

Some notable achievements include continued work on the CCX intermodal facility in Rocky Mount, progress on Charlotte Gateway Station and the Rail Division receiving \$127 million in grant funding for safety, freight connectivity and passenger fleet improvements.

[Click here to see the 2020 Rail in Review video!](#)

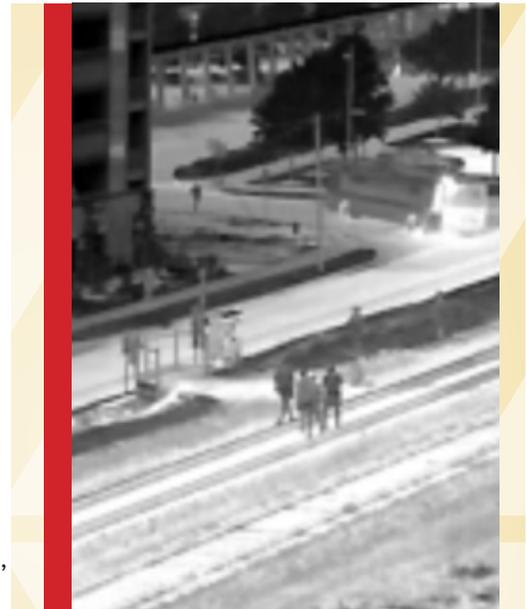
## Comprehensive Railroad Trespassing and Modeling Research Completed

The NCDOT Rail Division and the Institute for Transportation Research and Education at NC State University have completed unprecedented, 4-year, comprehensive railroad trespassing and predictive modeling research.

Railroad right of way is private property and those who enter it without authorization are considered trespassing. Trespassing is the leading cause of rail-related deaths in North Carolina and the Rail Division is a leader in efforts to understand and mitigate resulting death and injury from such activity. In 2019 there were 41 trespasser incidents resulting in 22 fatalities. The number of trespasser fatalities has remained steady year to year.

The study conducted research to develop a more complete understanding of the extent of pedestrian trespassing along the rail network in North Carolina. Supported by NCDOT Research and Development, this project seeks to better quantify and describe the universe of trespassing activities, including those events that do not result in injury or death through static (fixed base) thermal camera systems.

The study is the culmination of two research projects: the first along the *Piedmont* corridor in 2017-2018 and the second along Class I railroads in eastern and mid-western N.C. in 2019-2020.



**15,570 trespassers were documented over 721 days at 11 sites.**

**Thermal video camera systems with motion detection were installed at known trespassing paths in Charlotte, Durham, Elon, Gastonia, Greensboro, Lumberton, Mebane, Raleigh, Rocky Mount, Salisbury and Shelby.**

A sampling plan was created to collect at least one complete week of 24/7 thermal video data at each site in each season for one year. Thermal camera systems captured violators to determine a count of trespassing events for the data collection time periods and an estimate of the trespassing frequency at the hot spots. Using these trespassing event data, models for estimating and predicting trespassing across the rail network were developed. The information was also used to develop profiles of trespassing activity by season, month, day of the week, and hour of day for each hot spot location that can inform local-level trespass mitigation strategies.



**The research team hypothesized that most trespassing events are the result of people trying to reach their destinations through the shortest, most direct route.**

- Across the 11 study locations, 95% of trespassing events involved crossing the tracks compared to five percent of events that involved movement along the tracks within the view of the camera.
- The median time on the tracks for those crossing is three seconds.
- Thirty-five percent of people were traveling in groups of two or more.
- One percent of events across all sites included the presence of a train.
- Most events involved walking along or through the railroad right-of-way.
- Very few events (<1%) involved sitting or lying on the tracks or elsewhere in the railroad right-of-way.

The thermal video camera systems captured people traveling alone, in pairs, in groups, adults and children, people carrying bags and bikes, walking dogs and pushing strollers. Most people moved along, some lingered, and very few stood around or sat on or near the tracks.

## Research findings include:

- The magnitude of trespassing is much greater than indicated by FRA incident reporting and train crew surveys.
- Most trespassing events are short in duration and involve crossing the tracks rather than movement along the right-of-way.
- Variability in time-of-day/day-of-week/month-of-year patterns appear to be influenced by local environmental and population factors.
- Most trespassing activity occurred during daylight hours and volumes were generally consistent across the days of the week and month to month.

The next steps of this project will use the NCDOT Research & Development's Technology Transfer (T<sup>2</sup>) Program to design an education presentation with case summary and trespass predictive models delivered through outreach and training activities in the study communities. There will also be presentations at the state and national level. The data will be used to further the Rail Division's efforts in education, supporting enforcement and providing engineering solutions to continue to address the issue of trespassing on rail corridors.



The report of [Rail Network Trespass Statewide Severity Assessment and Predictive Modeling \(2019-08\)](#) is available at NCDOT Research and Development's Connect website [here](#).

NCDOT  
**BeRailSafe**  
BeRailSafe.org

# Traveling Safely Onboard with NC By Train and Amtrak

Across the United States, Amtrak and states providing passenger rail services have partnered to make train travel as safe as possible for passengers and staff during the COVID-19 pandemic. Nationwide, precautions are being taken to ensure the safety of our passengers with enhanced cleaning procedures and social distancing measures in place. Face coverings are required in the stations and on trains. North Carolina train stations are operating on regular hours and are constantly being cleaned to keep employees and passengers comfortable and safe.

*Carolinian* trains 79 and 80 have consistently been among the best performing trains in the nation for ridership recovery during the pandemic. In addition to the *Carolinian*, *Piedmont* trains 73, 74, 75 and 76 are in service between Raleigh and Charlotte and the stops in between, providing safe and essential transportation. Trains 77 and 78 will resume regular schedules on April 5.



The *Piedmont* travels near Nowell Rd. in Raleigh

Photo: Andrew B. Futrell



Visit [ncbytrain.org](http://ncbytrain.org)  
for more information  
and to book tickets.

## Piedmont & Carolinian Schedules

73 Piedmont	75 Piedmont	77* Piedmont	79 Carolinian		80 Carolinian	74 Piedmont	76 Piedmont	78* Piedmont
6:30 AM	10:00 AM	3:00 PM	5:30 PM	RALEIGH, NC	10:05 AM	1:41 PM	6:26 PM	10:11 PM
6:42 AM	10:12 AM	3:12 PM	5:43 PM	CARY, NC	9:47 AM	1:23 PM	6:08 PM	9:53 PM
7:02 AM	10:32 AM	3:32 PM	6:09 PM	DURHAM, NC	9:27 AM	1:03 PM	5:48 PM	9:33 PM
7:38 AM	11:08 AM	4:08 PM	6:46 PM	BURLINGTON, NC	8:46 AM	12:24 PM	5:09 PM	8:54 PM
8:03 AM	11:33 AM	4:33 PM	7:19 PM	GREENSBORO, NC	8:24 AM	12:03 PM	4:48 PM	8:33 PM
8:19 AM	11:49 AM	4:49 PM	7:32 PM	HIGH POINT, NC	8:02 AM	11:44 AM	4:29 PM	8:14 PM
8:53 AM	12:23 PM	5:23 PM	8:06 PM	SALISBURY, NC	7:28 AM	11:11 AM	3:56 PM	7:41 PM
9:09 AM	12:39 PM	5:39 PM	8:23 PM	KANNAPOLIS, NC	7:10 AM	10:55 AM	3:40 PM	7:25 PM
9:40 AM	1:10 PM	6:10 PM	8:56 PM	CHARLOTTE, NC	6:45 AM	10:30 AM	3:15 PM	7:00 PM

**\*Service for *Piedmont* trains 77 & 78 will resume April 5, 2021.**

Trains 73, 74, 75, 76, 79 & 80 are operating on normal schedules.

## Rail Division Celebrates Employees with Service Awards

The Rail Division's Service Awards ceremony looked very different this year compared to the past, as it was held virtually. However, there was no lack of spirit as landmark employment milestones and successes were celebrated online. Employees who received awards are listed below.



### 25 Years

Lena White, Project Engineer

Greg Keel, Rail Contracts Manager

### 20 Years

Jason Orthner, Rail Director

Nancy Horne, Rail Signals Manager

Meredith McLamb, Surfaces & Encroachments Manager

Greg Blakeney, Senior Rail Project Development Engineer

### 15 Years

Jahmal Pullen, Engineering Coordination & Safety Manager

### 10 Years

Ron Lucas, Rail Project Development Manager

Eric Swanson, Rail Construction Manager

Timothy Abbott, Safety Enforcement & Oversight Manager,

Rail Safety Inspector, Motive Power and Equipment

### 5 Years

Brian Gackstetter, Senior Project Engineer

# Charlotte Gateway Station – Phase I Construction Update



Looking south across new bridges over Trade St toward the block that will be the primary station area for the City's mixed-use development



Pouring concrete for south platform egress stairway and tunnel

The Charlotte Gateway Station Phase 1 project is targeted for completion in 2023. The scope includes bridges to support passenger rail tracks, a center island level-boarding platform, plus railroad track and signals.

*Charlotte Gateway Station – Phase I Construction Update continued*



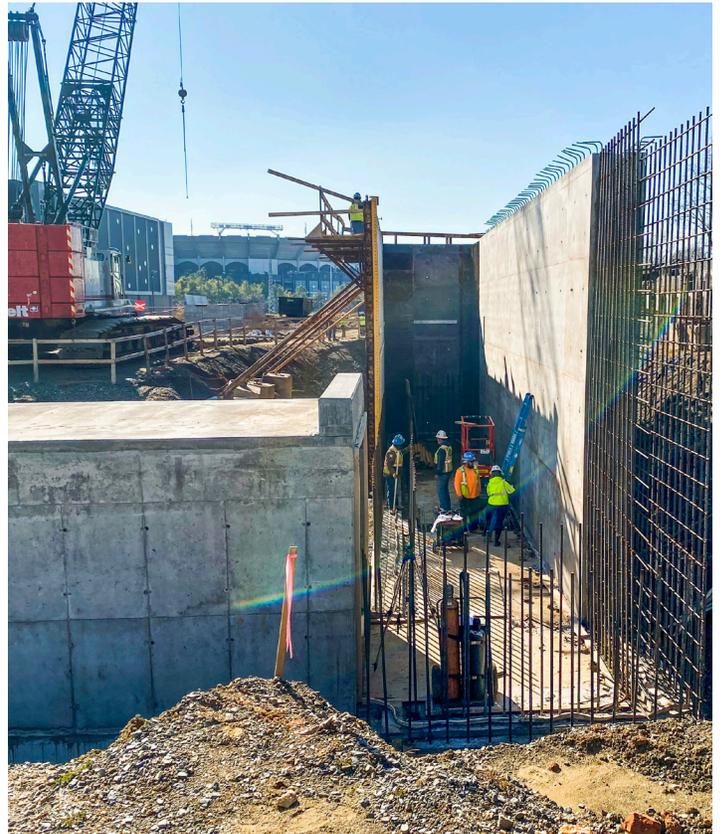
*Construction of foundation for passenger and baggage concourse*



*Construction of platform foundations between 5th and Trade streets*



*Construction of platform foundations between 5th and Trade streets*



*Construction of south platform egress stairway*

## CCX Construction Update, Rocky Mount



Construction is ongoing at the Carolina Connector (CCX) intermodal terminal in Edgecombe County. As shown in the below photos, significant grading, utility and paving activities are nearly complete, and construction of the yard track and buildings are nearly finished. The material for the movable electric cranes has been delivered and is awaiting assembly.



*Terminal site looking west*



*Terminal site looking south*